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**USDA
GRADES
FOR
PORK
CARCASSES**

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FOREWORD

Standardization makes our way of life possible.

It began shortly before the Civil War when the manufacture of rifles with interchangeable parts ushered in the era of mass production. Today, manufactured products are turned out by the millions, each exactly like the other down to the thousandth of an inch.

Farm products, however, cannot be "manufactured" to close tolerances. To fit into an age of mass production and mass marketing, they must be sorted *after* they're produced. The sorting process is what we call grading.

But grading, to be useful in the kind of national market we have today, must be done on the basis of nationally uniform, nationally understood standards.

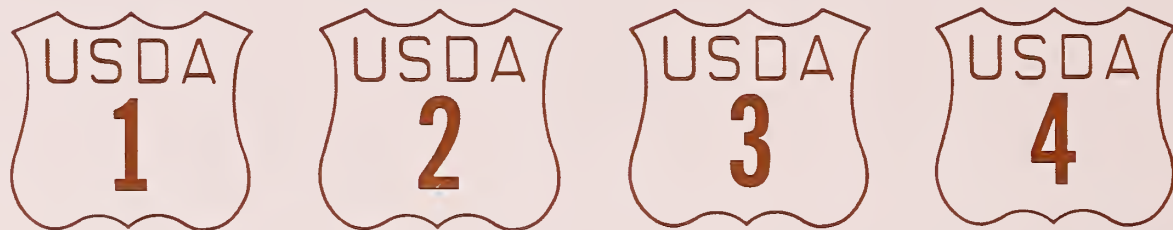
U.S. Choice, U.S. No. 1—these and other grade names—have become the language of trade in farm products across our country. The U.S. standards are the "dictionary" that

gives definition and meaning to that language. They define the attributes of a product that determine its desirability and value. These are factors such as yield of edible product and eating quality (tenderness, juiciness, and flavor).

And for each product, the standards provide a means of classifying its entire range of quality. Because some products are naturally more variable than others, it's necessary to have more grades for them than for others.

The standards are prepared by U.S. Department of Agriculture technicians in terms that, as nearly as possible, can be easily understood and uniformly applied.

Although the standards are basic to the official Federal and Federal-State grading and market news services, their use is by no means confined to these official uses. Federal standards are the guidelines in virtually all buying and selling. Without this universally understood language of official grade standards, trade by description across this vast nation would indeed be difficult and much less precise.



INTRODUCTION

If you are a producer who would like to get a higher price for your better hogs—

If you are a meat packer who would like to be able to buy hogs on the basis of their true worth—and get just the kind that suits your needs—

If you are a retailer who would like to be able to buy pork from your suppliers with more precision—and sell more to your customers—

If you are a consumer who would like to get meatier pork cuts—

Then U.S. Department of Agriculture grades for pork carcasses can help you.

Grades for pork carcasses, like those for other farm products, provide a language for trading understood across the nation.

Standards for grades of pork carcasses—again, like those for other farm products—are based on the attributes of the product that determine its value and utility. For pork, that means the quality of the lean meat and the yield of the four lean cuts—hams, loins, picnics, and Boston butts.

With respect to the quality of the lean, the pork standards provide two groupings—acceptable and unacceptable. Pork carcasses with unacceptable lean quality are graded U.S. Utility. Pork carcasses that have acceptable quality of lean are further grouped—by yield of four lean cuts—as U.S. No. 1, 2, 3, or 4. The factors affecting the yields of cuts—and, therefore, defined in the standards as the basis for the

numerical grades—are the fatness of the carcass and its muscling.

A U.S. No. 1 pork carcass is expected to yield more than 53 percent of its weight in the four major lean cuts. Obviously, this is a more valuable carcass than a U.S. No. 2, which will yield between 50 and 53 percent, a No. 3 which will yield 47 to 50 percent, or a No. 4 which will yield less than 47 percent.

Since the grades indicate the yields of the various cuts, they make it possible to buy and sell pork carcasses on the basis of their worth. Together with the related grades for slaughter hogs and feeder pigs, they also make it possible to pay the hog producer on the basis of the value of his product.

There are substantial value differences between pork carcasses. During July 1969, the value differences between adjacent grades of 150-pound carcasses averaged nearly \$1.25 cwt. Thus, there is ample justification for the packer to pay more to the producer who raises leaner, meatier hogs. While some price differentials based on grade are now being paid, these usually are not as large as the actual value differences that exist. However, as the marketing of swine on merit increases, price differentials should develop that will more nearly reflect value differences.

Actually, the grades—and their greater use by the industry—can benefit all segments of the industry.

For the producer—They provide a market identification through which producers can be rewarded, in dollars, for marketing leaner, meatier swine. Also, they are a valuable tool in selecting breeding stock and in planning and oper-

ating the most efficient production, feeding, and marketing program.

For the packer—They are a tool which will permit him to more precisely determine value differences in the market hogs he buys and the pork he sells.

For the retailer and consumer—To the extent that the market gives appropriate monetary recognition to differences in value associated with grade, this will encourage the increased production of meat-type hogs. And this, in turn, will provide retailers a more consistent supply of the kind of pork most preferred by consumers—tender, juicy, and flavorful and with a high ratio of lean to fat and bone.

According to a recent USDA report,¹ in the seven years from 1961 to 1968, substantial progress was made in producing hogs with less fat and more lean. This occurred despite the fact that during this period only minor price differentials were paid for hogs of different grades. However, the grades provided an educational tool to measure the progress producers have made in supplying consumers with the leaner, meatier pork they desire. In this report, it is estimated that in 1968 the grade distribution of barrows and gilts slaughtered in the U.S. was:

GRADE	PERCENT
U.S. No. 1	8
U.S. No. 2	42
U.S. No. 3	36
U.S. No. 4	12
U.S. Utility	2

To assure that the U.S. grades for swine and pork are of maximum benefit to the industry, the grades for slaughter hogs are correlated directly with the grades for pork carcasses. Similarly, the grades for feeder pigs also are directly correlated with the grades for slaughter hogs. Thus, a U.S. No. 1 feeder pig, for example, has the potential of developing into a U.S. No. 1 slaughter hog, which in turn, is expected to produce a U.S. No. 1 carcass.

The official grade standards for slaughter swine and feeder pigs are contained in a separate publication which may be obtained from the Livestock Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington, D.C. 20250.

¹ "Improvements in Grades of Hogs Slaughtered From 1960–61 to 1967–68," Marketing Research Report No. 849, Economic Research Service, U.S. Department of Agriculture.

USDA GRADES FOR PORK CARCASSES

DEVELOPMENT OF THE STANDARDS

Tentative standards for grades of pork carcasses and fresh pork cuts were issued by USDA in 1931. These tentative standards were slightly revised in 1933.

New standards for grades of barrow and gilt carcasses were proposed by USDA in 1949. These standards represented the first application of objective measurements as guides to grades for pork carcasses. Slight revisions were made in the proposed standards prior to adoption, as the Official United States Standards for Grades of Barrow and Gilt Carcasses, effective September 12, 1952.

The official standards were amended in July 1955, by changing the grade designations Choice No. 1, Choice No. 2, and Choice No. 3 to U.S. No. 1, U.S. No. 2, and U.S. No. 3, respectively. In addition, the backfat thickness requirements were reduced for each grade and the descriptive specifica-

tions were reworded slightly to reflect the reduced fat thickness requirements and to allow more uniform interpretation of the standards.

On April 1, 1968, the official standards were again revised to reflect the improvements made since 1955 in pork carcasses. The minimum backfat thickness requirement for the U.S. No. 1 grade was eliminated and a new U.S. No. 1 grade was established to properly identify the superior pork carcasses then being produced. The former No. 1, No. 2, and No. 3 grades were renamed No. 2, No. 3, and No. 4 respectively. The former Medium and Cull grades were combined and renamed U.S. Utility. Also, the maximum allowable adjustment for variations-from-normal fat distribution and muscling was changed from one-half to one full grade to more adequately reflect the effect of these factors on yields of cuts.

In addition, the text of the "Application of Standards" section was reworded to more clearly define the grade factors and clarify their use in determining the grade.

BASIS FOR PORK CARCASS STANDARDS

The standards for grades of pork carcasses developed by the United States Department of Agriculture provide for segregation according to (a) class, as determined by the apparent sex condition of the animal at the time of slaughter, and (b) grade, which reflects the quality of pork and the relative proportion of lean cuts to fat cuts in the carcass.

PORK CARCASS CLASSES

The five classes of pork carcasses, comparable to the same five classes of slaughter hogs, are barrow, gilt, sow, stag, and boar carcasses. This publication concerns only the standards for grades of barrow and gilt carcasses.

Following are the *Official United States Standards for Grades of Barrow and Gilt Carcasses*. The sections in italics are not part of the standards but are included as explanatory material.

APPLICATION OF STANDARDS

Grades for barrow and gilt carcasses are based on two general considerations: (1) quality-indicating characteristics of the lean, and (2) expected combined yields of the four lean cuts (ham, loin, picnic shoulder, and Boston butt).

QUALITY

With respect to quality, two general levels are considered: one for carcasses with characteristics which indicate that the lean in the four lean cuts will have an acceptable quality and

one for carcasses with characteristics which indicate that the lean will have an unacceptable quality. The quality of the lean is best evaluated by a direct observation of its characteristics in a cut surface and when a cut surface of major muscles is available, this shall be used as the basis for the quality determination. The standards describe the characteristics of the loin eye muscle at the 10th rib. However, when this surface is not available, other exposed major muscle surfaces can be used for the quality determination based on the normal development of the characteristics in relation to those described for the loin eye muscle at the 10th rib. When a major muscle cut surface is not available, the quality of the lean shall be evaluated indirectly based on quality-indicating characteristics that are evident in carcasses. These include firmness of the fat and lean, amount of feathering between the ribs, and color of the lean. The standards describe a development of each of these factors that is normally associated with the lower limit of acceptable lean quality. The degree of external fatness, as such, is not considered in evaluating the quality of the lean.

Carcasses which have characteristics indicating that the lean in the four lean cuts will not have an acceptable quality or bellies too thin to be suitable for bacon production are graded U.S. Utility. Also graded U.S. Utility—regardless of their development of other quality-indicating characteristics—are carcasses which are soft and oily. Belly thickness is determined by an overall evaluation of its thickness with primary consideration being given to the thickness along the navel edge and thickness of the belly pocket.

YIELD

Four grades—U.S. No. 1, U.S. No. 2, U.S. No. 3, and U.S. No. 4—are provided for carcasses which have indications of an acceptable lean quality and acceptable belly thickness. These grades are based entirely on the expected carcass yields of the four lean cuts and no consideration is given to a development of quality superior to that described as minimum for these grades. The expected yields of the four lean cuts for each of these four grades are shown in Table 1.

The yields shown in Table 1 are based on cutting and trimming methods used by the U.S. Department of Agriculture in developing the standards. (These methods generally specify a quarter inch fat trim and copies may be obtained from the Livestock Division, Agricultural Marketing Service, USDA, Washington, D.C. 20250.) Other cutting and trimming methods may result in different yields. For example, if more fat is left on the four lean cuts than prescribed in the USDA methods, the yield for each grade will be higher than indicated. However, such a method of trimming, if applied uniformly, should result in similar differences in yields between grades.

Carcasses vary in their yields of the four lean cuts because of variations in their degree of fatness and in their degree of muscling (thickness of muscling in relation to skeletal size). Since many carcasses have a normal distribution of fat and a normal development of muscling for their degree of fatness, in determining their grade the actual average thickness of

backfat and the carcass length or weight are the only factors considered.

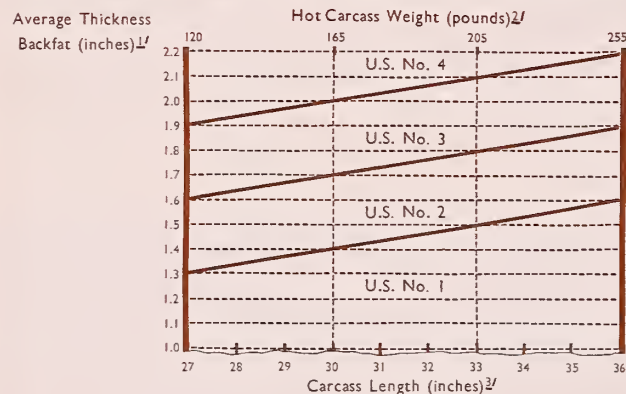
These relationships are illustrated in Figure 1 for carcasses either 27 to 36 inches long or weighing 120 to 255 pounds. For carcasses of other lengths or weights, average backfat thickness requirements for the various grades can be determined by an extension of the lines in this figure. Note: (In cases where length and backfat thickness indicate a different grade than weight and backfat, the grade shall be determined by using length.)

EXPECTED YIELDS OF THE FOUR LEAN CUTS BASED ON CHILLED CARCASS WEIGHT, BY GRADE

<i>Grade</i>	<i>Yield</i>
U.S. No. 1 — — — — —	53 percent and over.
U.S. No. 2 — — — — —	50 to 52.9 percent.
U.S. No. 3 — — — — —	47 to 49.9 percent.
U.S. No. 4 — — — — —	Less than 47 percent.

Table 1.

RELATIONSHIP BETWEEN AVERAGE THICKNESS OF BACKFAT, CARCASS LENGTH OR WEIGHT, AND GRADE FOR CARCASSES WITH MUSCLING TYPICAL OF THEIR DEGREE OF FATNESS.



^{1/} An average of three measurements including the skin made opposite the first and last ribs and the last lumbar vertebra. It also reflects adjustment, as appropriate, to compensate for variations - from - normal fat distribution.

^{2/} Carcass weight is based on a hot packer style carcass.

^{3/} Carcass length is measured from the anterior point of the aitch bone to the anterior edge of the first rib.

Figure 1.

OBJECTIVE MEASURES

In these standards the actual average thickness of backfat is an average of three measurements including the skin made opposite the first and last ribs and the last lumbar vertebra; carcass length is measured from the anterior point of the aitch bone to the anterior edge of the first rib next to the first vertebra (see Figure 2); and hot carcass weight (or chilled carcass weight multiplied by 102 percent) is based on an entire carcass dressed packer style—split into two sides down the back, jowls attached, and head, ham facings, and leaf fat removed. When carcasses are not dressed according to packer style or when, through condemnations or for other reasons, portions of the carcass have been removed, appropriate adjustments shall be made in carcass weight.

BACKFAT THICKNESS ADJUSTMENT

In some carcasses the actual average thickness of backfat is not representative of their degree of fatness. In such cases, an appropriate adjustment is made in the average thickness of backfat and the grade is then determined using the chart illustrated in Figure 1. In evaluating the degree of fatness to determine whether it is representative of the actual average thickness of backfat, particular attention is given

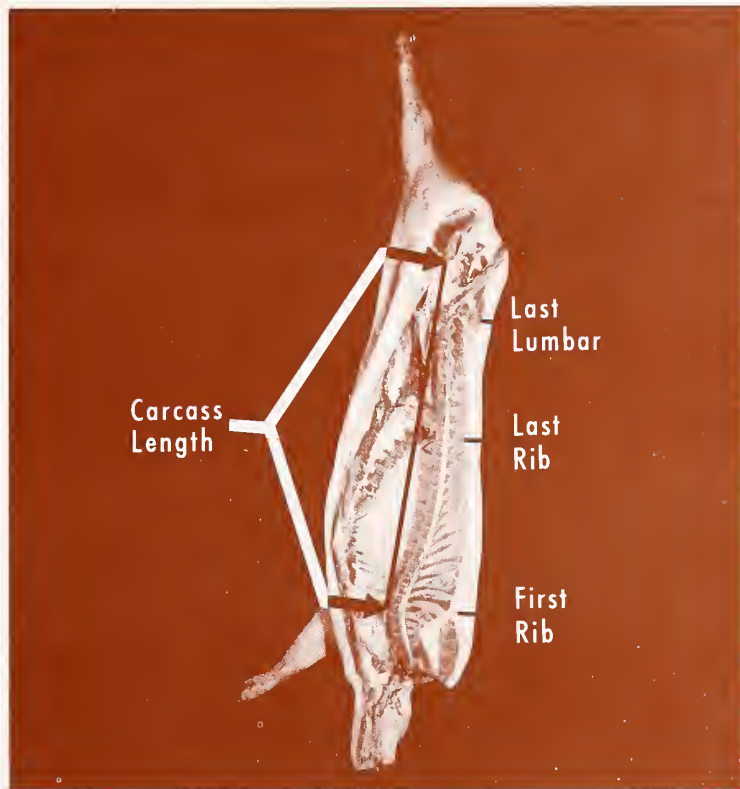


Figure 2.

to the backfat thickness at points other than those used in determining the average and to the amount of fat in such areas as over the outside of the ham, at the juncture of the belly with the shoulder, directly anterior to the hipbone, and over the edge of the loin. For a carcass having a fat distribution indicative of a greater degree of overall fatness than that normally associated with its actual thickness of backfat, the average thickness of backfat is adjusted upward. Likewise, for a carcass having a fat distribution indicative of a lesser degree of overall fatness than that normally associated with its actual average thickness of backfat, the average thickness of backfat is adjusted downward. In many carcasses, no adjustment is necessary. Although an adjustment in the average thickness of backfat of one-tenth of an inch is not uncommon, seldom should it exceed two-tenths of an inch.

DEGREE OF MUSCLING

The degree of muscling specified for each of the four grades decreases progressively from the U.S. No. 1 grade through the U.S. No. 4 grade. This reflects the fact that among carcasses of the same weight, fatter carcasses normally have a lesser degree of muscling. For purposes of these standards, six degrees of muscling are recognized: very thick, thick, moderately thick, slightly thin, thin, and very



Figure 3.

thin. These are intended to cover the entire range of muscling present among pork carcasses currently being produced. (Figure 3 illustrates five of the six degrees of muscling; the very thin degree is not shown). The degrees which are typical for carcasses at the minimum of the U.S. No. 1, No. 2, No. 3, and No. 4 grades are, respectively: thick, moderately thick, slightly thin, and thin. For carcasses having a development of muscling which is different from that normally associated with their degree of fatness, the average backfat thickness-carcass length or carcass weight relationships for the various grades are different than shown in Figure 1. Consideration is given such unusual developments of muscling as follows: In each grade, a superior development of muscling is permitted to compensate for a greater average backfat thickness at the rate of one-tenth inch greater backfat thickness for a full degree of superior muscling. Except for the U.S. No. 1 grade, the reverse type of compensation is also permitted at the same rate. In the U.S. No. 1 grade, this type of compensation is limited to one full degree of inferior muscling; carcasses which have less than moderately thick muscling but which would otherwise qualify for the U.S. No. 1 grade are graded U.S. No. 2.

In no case, however, may the combined effect of variations-from-normal fat distribution and muscling alter the final grade more than one full grade from that indicated by the actual average backfat thickness and carcass length and weight.

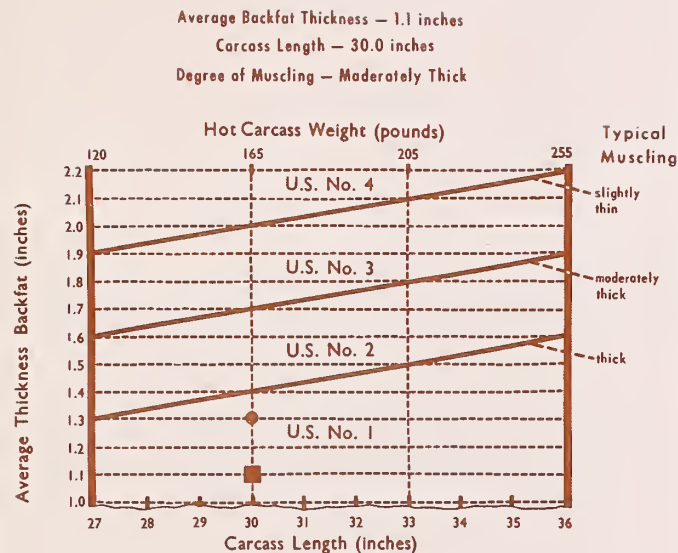


Figure 4.

EXAMPLES OF COMPENSATION

Figures 4 and 5 illustrate the application of the compensations. Figure 4 describes a carcass 30 inches long with an actual average backfat thickness of 1.1 inches, normal fat distribution, and moderately thick muscling. On the basis of its length and actual average backfat thickness, this carcass would be in the No. 1 grade as shown by the square in Figure 4. However, because this carcass has only moderately thick muscling—two degrees less than the very thick muscling associated with carcasses of this length and degree of fatness—an adjustment for this deficiency is required. Since the two full degrees of inferior muscling have the same effect on the yield of cuts as two-tenths inches additional fat, the grade would change to the point shown by the dot, but the carcass would still grade U.S. No. 1. The standards require a U.S. No. 1 carcass to have at least moderately thick muscling. Therefore, if this carcass had less than moderately thick muscling, it would grade U.S. No. 2.

Figure 5 describes a carcass 29 inches long with an actual average backfat thickness of 1.8 inches and thick muscling. On the basis of its length and actual average backfat thickness, this carcass would be in the No. 3 grade as shown by the square in Figure 5. In some carcasses, due to variation in fat deposition, the actual average backfat thickness is not representative of the overall degree of fatness. In such cases, the standards provide that an appropriate adjustment—either thicker or thinner—shall be made in the backfat thickness. In this carcass, after an evaluation of its fat distribution, it was determined that the overall degree of fatness was some-

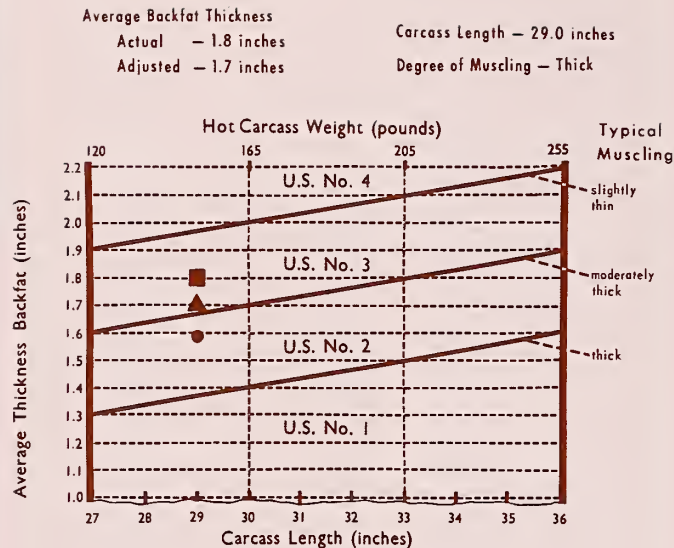


Figure 5.

what less than indicated by the actual average backfat thickness, so the backfat thickness was reduced to 1.7 inches. This would still leave the carcass in the No. 3 grade as indicated by the triangle. However, the thick muscling in this carcass is slightly more than one degree superior to the moderately thick muscling considered normal for such a carcass. This degree of superior muscling compensates for slightly more than one-tenth inch greater fatness, and the grade would change to the point shown by the dot—in the U.S. No. 2 grade.

Since carcasses qualifying for the U.S. No. 1, U.S. No. 2, U.S. No. 3, and U.S. No. 4 grades may vary with respect to their average thickness of backfat, their length or weight, their development of muscling, and their distribution of fat, there will be carcasses which qualify for each of these grades in which the development of one or more of these factors is more nearly typical of another grade. Because it is impractical to describe the nearly limitless numbers of such recognizable combinations of these factors, the standards for each grade describe only carcasses whose expected yield of the four lean cuts is at the lower limit of each grade and which have a development of muscling and distribution of fat which is normal for such carcasses.

The standards describe the development of the various grade factors as they appear in thoroughly chilled carcasses. However, carcasses with a lesser degree of chilling may be graded if there is reasonable assurance that after thorough chilling they will have indications of either acceptable or unacceptable quality of lean.

SPECIFICATIONS FOR OFFICIAL UNITED STATES STANDARDS for GRADES of BARROW and GILT CARCASSES

U.S. No. 1

Carcasses in this grade have an acceptable quality of lean, a high yield of lean cuts, and a low yield of fat cuts. For carcasses with minimum acceptable lean quality, the cut surface of the loin eye muscle at the 10th rib will be slightly firm, have a slight amount of marbling and be grayish pink to moderately dark red in color. However, for intact carcasses, minimum acceptable quality of lean is indicated by a slight amount of feathering, fat that is slightly firm, and lean that is slightly firm and grayish pink to moderately dark red in color. The belly is at least slightly thick.

Carcasses near the borderline between the U.S. No. 1 and U.S. No. 2 grades are thickly muscled in the hams, loins, and shoulders. The lower portion of the ham toward the hock is



The No. 1 grade carcass shown in Figure 6 is 30.4 inches long, with an average backfat thickness of 1.3 inches, normal fat distribution, and thick muscling. Notice particularly the thickness and plumpness of the ham. Also, notice the sharp depression just in front of the ham and a definite depression just behind the shoulder. You can also see that both the ham and shoulder are thicker than the loin.

Figure 6.

covered with a thin layer of fat, the back is well-rounded, the area at the juncture of the lower part of the shoulder and the belly is depressed in relation to the shoulder and the belly, and the area directly anterior to the hipbone is depressed in relation to the loin and ham. The maximum actual average thickness of backfat for carcasses in this grade will vary depending upon the distribution of fat, the development of muscling, and the carcass length or weight. For carcasses with a distribution of fat and development of muscling as described herein, the maximum average thickness of backfat increases from 1.3 to 1.6 inches with increases in either carcass length from 27 to 36 inches or carcass weight from 120 to 255 pounds (see Figure 1).

A development of muscling superior to that specified as minimum for the U.S. No. 1 grade may compensate for a development of fatness which is greater than that indicated in Figure 1 as maximum for the U.S. No. 1 grade at the rate of one full degree of muscling for one-tenth of an inch increase in thickness of backfat. For example, a carcass which is 30 inches long and which has very thick muscling may have an average thickness of backfat of 1.5 inches and remain eligible for the U.S. No. 1 grade. The reverse type of compensation is also permitted—at the same rate—except that in no case may a carcass be graded U.S. No. 1 with less than moderately thick muscling. Also, in no case may the combined effect of variations in muscling and fat distribution from those described herein alter the final grade more than one full grade from that indicated by the actual average backfat thickness and either carcass length or weight.

U.S. No. 2

Carcasses in this grade have an acceptable quality of lean, a slightly high yield of lean cuts, and a slightly low yield of fat cuts. For carcasses with minimum acceptable lean quality, the cut surface of the loin eye muscle at the 10th rib will be slightly firm, have a slight amount of marbling and be grayish pink to moderately dark red in color. However, for intact carcasses, minimum acceptable quality of lean is indicated by a slight amount of feathering, fat that is slightly firm, and lean that is slightly firm and grayish pink to moderately dark red in color. The belly is at least slightly thick.

Carcasses near the borderline between the U.S. No. 2 and U.S. No. 3 grades are moderately thickly muscled in the hams, loins, and shoulders. The lower portion of the ham toward the hock is covered with a slightly thin layer of fat and the back is slightly well-rounded. The area at the juncture of the lower part of the shoulder and belly is slightly depressed in relation to the shoulder and belly and the area directly anterior to the hipbone is slightly depressed in relation to the loin and ham. The maximum actual average thickness of backfat for carcasses in this grade will vary depending upon the distribution of fat, the development of muscling, and the carcass length or weight. For carcasses with a distribution of fat and development of muscling as described herein, the maximum average thickness of backfat increases from 1.6 to 1.9 inches with increases in either carcass length from 27 to 36 inches or carcass weight from 120 to 255 pounds (see Figure 1).



Figure 7.

A development of muscling superior to that specified as minimum for the U.S. No. 2 grade may compensate for a development of fatness which is greater than that indicated in Figure 1 as maximum for the U.S. No. 2 grade at the rate of one full degree of muscling for one-tenth of an inch increase in thickness of backfat. For example, a carcass which is 30 inches long and which has thick muscling may have an average thickness of backfat of 1.8 inches and remain eligible for the U.S. No. 2 grade. The reverse type of compensation is also permitted at the same rate. For example, a carcass which is 30 inches long and which has an average thickness of backfat of 1.6 inches may have slightly thin muscling and remain eligible for the U.S. No. 2 grade. In no case may the combined effect of variations in muscling and fat distribution from those described herein alter the final grade more than one full grade from that indicated by the actual average backfat thickness and either length or weight.

The No. 2 grade carcass shown in Figure 7 is 29.5 inches long, with an average backfat thickness of 1.6 inches, normal fat distribution, and moderately thick muscling. Notice in this carcass that the area just in front of the ham is covered with more fat than the No. 1 carcass and that it is only slightly depressed. The area just behind the shoulder is only slightly depressed and the loin is nearly as thick as the ham and shoulder. The ham appears slightly plump and moderately thick.

U.S. No. 3

Carcasses in this grade have an acceptable quality of lean, a slightly low yield of lean cuts, and a slightly high yield of fat cuts. For carcasses with minimum acceptable lean quality, the cut surface of the loin eye muscle at the 10th rib will be at least slightly firm, have a slight amount of marbling, and be grayish pink to moderately dark red in color. However, for intact carcasses, minimum acceptable quality of lean is indicated by a slight amount of feathering, fat that is slightly firm, and lean that is slightly firm and grayish pink to moderately dark red in color. The belly is at least slightly thick.

Carcasses near the borderline between the U.S. No. 3 and U.S. No. 4 grades are slightly thinly muscled in the hams, loins, and shoulders. The lower portion of the ham toward the hock is covered with a slightly thick layer of fat. The back is slightly flat and the edge of the loin is slightly full, resulting in a slight break from the back into the side. In the area at the juncture of the lower part of the shoulder and the belly there is only a slight depression in relation to the shoulder and the belly. In the area directly anterior to the hipbone there is only a very slight depression in relation to the loin and ham. The maximum actual average thickness of backfat for carcasses in this grade will vary dependent upon the distribution of fat, the development of muscling, and the carcass length or weight. For carcasses with a distribution of fat and development of muscling as described herein, the maximum average thickness of backfat increases from 1.9 to 2.2 inches with increases in either carcass length from 27 to 36 inches or carcass weight from 120 to 255 pound (see Figure 1).



Figure 8.

A development of muscling superior to that specified as minimum for the U.S. No. 3 grade may compensate for a development of fatness which is greater than that indicated in Figure 1 as maximum for the U.S. No. 3 grade at the rate of one full degree of muscling for one-tenth of an inch increase in thickness of backfat. For example, a carcass which is 30 inches long and which has moderately thick muscling may have an average thickness of backfat of 2.1 inches and remain eligible for the U.S. No. 3 grade. The reverse type of

compensation is also permitted at the same rate. For example, a carcass which is 30 inches long and which has an average thickness of backfat of 1.9 inches may have thin muscling and remain eligible for the U.S. No. 3 grade. In no case may the combined effect of variations in muscling and fat distribution from those described herein alter the final grade more than one full grade from that indicated by the actual average backfat thickness and either carcass length or weight.

The No. 3 carcass shown in Figure 8 is 30.0 inches long, with an average backfat thickness of 1.9 inches, normal fat distribution, and slightly thin muscling. Notice in this carcass that there is very little depression both just in front of the ham and just behind the shoulder. This carcass appears very uniform in its thickness from ham to shoulder. There is very little plumpness visible in the ham.

U.S. No. 4

Carcasses in this grade have an acceptable quality of lean but a lower expected yield of lean cuts than carcasses in the U.S. No. 3 grade.

The No. 4 grade carcass shown in Figure 9 is 28.5 inches long, with an average backfat thickness of 2.2 inches, normal fat distribution, and thin muscling. A noticeable characteristic of this carcass is that the loin is thicker than either the ham or shoulder. There are no depressions visible in the areas in front of the ham and behind the shoulder. The ham appears thin and flat.

U.S. Utility

Included in this grade are all carcasses which have characteristics that indicate they will have a lesser development of lean quality than described as minimum for the U.S. No. 1, U.S. No. 2, U.S. No. 3, and U.S. No. 4 grades. Also included are all carcasses which do not have acceptable belly thickness and all carcasses—regardless of their development of other quality-indicating characteristics—which are soft and oily.



Figure 9.

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